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14. ABSTRACT
Learning Objective 1: Recognize that iron pill gastritis is a known complication of oral supplementation but is not well recognized

Learning Objective 2: Recognize that the toxic effect of iron on gastrointestinal mucosa is caused by focal erosive mucosal injury similar to a chemical burn and may be avoided through use of alternate forms such as liquid iron or IV iron supplementation.

Case: A 32-year-old Caucasian male with a past medical history of Barrett's esophagus and esophagitis presented with abdominal pain, hematemesis, and hematochezia. Inpatient EGD showed severe esophagitis without active bleeding and multiple small erosions in the fundus without evidence of blood and relatively normal pylorus. The patient remained hemodynamically stable and his celebrex was discontinued. The patient was started on oral iron supplementation for iron deficiency anemia at hospital discharge.

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Title: Gastric Injury from Oral Iron Supplementation

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ABSTRACT BODY:

Learning Objective 1: Recognize that iron pill gastritis is a known complication of oral supplementation but is not well recognized

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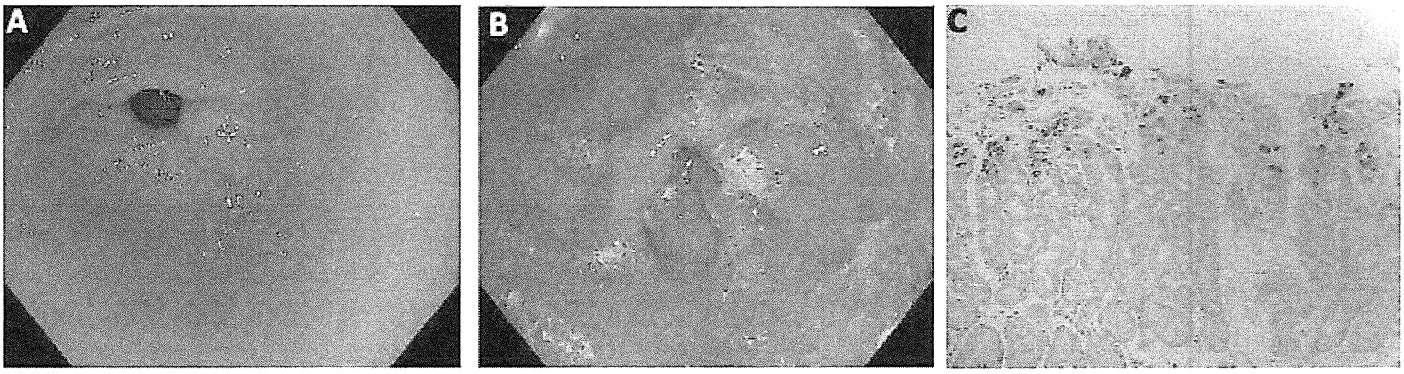
One month later the patient had a follow up EGD that showed multiple new linear hyper-pigmented peripyloric extensions of unknown etiology. Tissue biopsy revealed pigmented foreign material that stained positive for iron. Patient's endoscopy findings were most consistent with pill gastritis from an oral iron supplement that had been initiated one month prior. Patient was transitioned to IV iron supplementation. Unfortunately, the patient was lost to follow up and repeat EGD to confirm resolution of those lesions was no obtained.

Discussion: Iron deficiency anemia is a very common condition with an estimated 25 percent prevalence worldwide (WHO). The typical treatment for iron deficiency anemia is through oral iron tablet supplementation. Iron pill gastritis is a known complication of oral supplementation but is not well recognizec However, there is evidence that mucosal injury associated with oral iron supplementation may actually be more widespread than previously realized. One case series found that 16% of patients taking oral iron tablets were discovered to have iron deposition on routine H&E staining. Of those with iron deposition, 63% had mucosal erosions and 80% had reactive gastritis. There was also a positive association between PPI use and iron deposition (Kaye et al). Iron deposition in the gastrointestinal tract is also found to be more common in conditions associated with iron overload states such as hemochromatosis, cirrhosis, or multiple blood transfusions (Haig et al).

The toxic effect of iron on gastrointestinal mucosa is thought to be caused by focal erosive mucosal injury similar to a chemical burn. The mechanism of injury is hypothesized to be mediated by oxygen free radial production causing tissue necrosis when the iron concentration overwhelms the normal energy-dependent absorption mechanisms (Murray et al). Furthermore, this is hypothesized to occur in a concentration dependent matter from oral tablets (Hashash et al).

Many patients taking oral ion tablets experience upper gastrointestinal symptoms such as nausea and dyspepsia which can result in non-compliance. Although it is commonly recognized that oral iron supplementation may lead to unpleasant side effects, the association between iron toxicity and mucosal injur is not as well documented. Use of alternate forms such as liquid iron or IV iron supplementation may be better tolerated as this route may have less local concentration effect on the gastrointestinal mucosa. Primar care providers should be aware of this common side effect and be familiar with other treatment modalities fc iron deficiency anemia. They should also be aware that certain conditions like hemochromatosis and cirrhosis may predispose those patients to higher iron deposition in the gastrointestinal tract and increased risk of mucosal injury with oral iron supplementation.

Images:



A. Initial EGD of pylorus. B. Follow up EGD 1 month later showing multiple linear hyper-pigmented peripyloric extensions. C. Gastric biopsy with iron stain demonstrating abundant blue staining iron in the pits, glands and lamina propria of the gastric biopsy. 200x.